

**Notice of Allowability**

Application No.

10/713,468

Applicant(s)

KNIERIM ET AL.

Examiner

Hai L. Nguyen

Art Unit

2816

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 1/17/2006.
2. ☒ The allowed claim(s) is/are 1-27.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_

  
TIMOTHY P. CALLAHAN  
SUPERVISORY PATENT EXAMINER

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendments filed on 01/17/2006 have been received and entered in the case. In view of Applicant's amendments and arguments with respect to the previous prior art rejections to claims 1-3, mailed on 10/19/2005, Applicant's arguments have been considered and found persuasive, as such; the prior art rejections have been withdrawn. Therefore the case is found to be in allowance condition for the reasons as set for below.

## **REASON FOR ALLOWANCE**

2. The following is an examiner's statement of reasons for allowance as indicated in the previous Office Action mailed on 10/19/2005: The prior art of record fails to disclose or fairly suggest a phase-locked loop-type frequency synthesizer (200 in instant Fig. 2) and a method of use thereof, as recited in claims 4 and 27, having specific structural limitations such as a modulator (280 in instant Fig. 3) for providing the sequence of divide ratios wherein a next value in the sequence of divide ratios is provided by (a) accumulating an error between a present value in the sequence of divide ratios and an average value of the sequence of divide ratios, (b) accumulating the accumulated errors, and (c) selecting the next value in the sequence of divide ratios such that the multiply-accumulated error values are maintained within finite bounds, wherein the modulator comprises: a first accumulator for accumulating an error between a present value in the sequence of divide ratios and an average value of the sequence of divide ratios; a second accumulator for accumulating an error output of the first accumulator; and a feedback circuit having at least the error output from the first accumulator and an accumulated

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error output from the second accumulator as inputs for feeding back an accumulated error to the first accumulator for providing a next value in the sequence of divide ratios; and being configured in combination with the rest of the limitations of the base claims and any intervening claims.

Claim 19 is allowed for similar reasons; note the above discussion with regard to claims 4 and 27.

The prior art of record fails to disclose or fairly suggest a method of use thereof, as recited in claim 1, having specific structural limitations such as the step of dividing an oscillating signal having a first frequency according to a sequence of at least three distinct divide ratios to produce a divided signal having a frequency approximating a reference signal frequency, wherein a next value in said sequence of divide ratios is determined by (a) accumulating an error between a present value in said sequence of divide ratios and an average value of said sequence of divide ratios, (b) accumulating the accumulated errors, and (c) selecting the next value in said sequence of divide ratios such that the multiply-accumulated error is maintained within finite bounds; and being configured in combination with the rest of the limitations of the base claims and any intervening claims.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

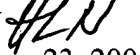
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***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai L. Nguyen whose telephone number is 571-272-1747. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HLN   
January 23, 2006